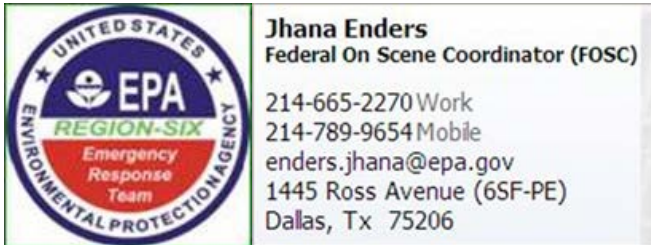


From: [Enders, Jhana](#)
To: [Turner, Philip](#)
Subject: FW: Phosphine discussions today
Date: Friday, February 17, 2017 12:52:30 PM
Attachments: [Ca EPA phosphine.pdf](#)
[image002.png](#)



From: Martin, Thomas [mailto:thomas.martin@ttuhsc.edu]
Sent: Thursday, February 16, 2017 9:38 AM
To: May, Shaun
Cc: Enders, Jhana ; eddy.vance@tceq.texas.gov; david.durst@tceq.texas.gov; Schuster, Randy ; Orton, Chip ; Milton, S ; heidi.bojes@dshs.state.tx.us; Jaramillo, Jeanie ; Ruhl, Christopher ; Jaramillo, Jeanie
Subject: RE: Phosphine discussions today

Here is a quote from the attached California EPA phosphine document:

"Environmental fate Air. Phosphine reacts with hydroxide radicals (HOx) in the air. The latter result from the chemical interaction between ozone (O3) and water. The reaction rate increases with the presence of nitroxide (NOx) impurities. The half-life of phosphine in the presence of normative concentrations of HOx is 28 hr. However, this value decreases to 5 hr under sunny conditions due to the increase in HOx concentrations. Ultimately, phosphorus oxyacids and inorganic phosphate are produced and deposited. Complete disappearance of phosphine from sealed dry tubes occurred within 40 days."

I think worse case scenario would be the sealed dry tube and it was completely gone within 40 days.

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Texas Tech University Health Sciences Center

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From: Martin, Thomas
Sent: Thursday, February 16, 2017 8:36 AM
To: May, Shaun
Cc: Enders, Jhana; [eddy.vance@tceq.texas.gov](#); [david.durst@tceq.texas.gov](#); Schuster, Randy; Orton, Chip; Milton, S; [heidi.bojes@dshs.state.tx.us](#); Jaramillo, Jeanie; Ruhl, Christopher; Jaramillo, Jeanie
Subject: RE: Phosphine discussions today

Here is a quote from the attached EPA document:

"Phosphine in the atmosphere is rapidly degraded (World Health Organization, 1988). The half-life in air is

approximately five hours with the mechanism of degradation being photoreaction with hydroxy radicals. The dark half-life is approximately 28 hours. The expected reaction products of phosphine in air are oxyacids of phosphorous and inorganic phosphate which are non-volatile."

This suggests that another indoor air quality assessment is in order to evaluate the safety of reoccupying the home.

Does anyone have any references for phosphine off gassing from furniture or painted walls?

Tom

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From: Martin, Thomas

Sent: Friday, February 10, 2017 2:09 PM

To: May, Shaun

Cc: Enders, Jhana; eddy.vance@tceq.texas.gov; david.durst@tceq.texas.gov; Schuster, Randy; Orton, Chip; Milton, S; heidi.bojes@dshs.state.tx.us; Jaramillo, Jeanie; Ruhl, Christopher; Jaramillo, Jeanie

Subject: RE: Phosphine references discussed on conference call today

Here is another article of 2 tragic families with pediatric fatalities that were poisoned when aluminum phosphide was used as a pesticide in their homes. It appears that when adults and children are exposed that the children have worse outcomes.

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From: Martin, Thomas

Sent: Thursday, February 09, 2017 4:17 PM

To: May, Shaun

Cc: Enders, Jhana; eddy.vance@tceq.texas.gov; david.durst@tceq.texas.gov; Schuster, Randy; Orton, Chip; Milton, S; heidi.bojes@dshs.state.tx.us; Jaramillo, Jeanie; Ruhl, Christopher; Jaramillo, Jeanie

Subject: Phosphine references discussed on conference call today

Shaun,

Here are the 3 references that I mentioned. One is a case report of an accidental exposure that resulted in a

fatality from Salt Lake City. One is a residential exposure that occurred in Iran. The 3rd article was written by Dan Sudakin, a medical toxicologist in Oregon who runs a pesticide information center. Dan may have some valuable insight for some of our questions.

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